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Conference Abstract

Towards an annual species distribution EBV for the United Kingdom

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Abstract

A coherent framework for building Essential Biodiversity Variables (EBVs) is now emerging, but there are few examples of EBVs being produced at large extents. I describe the creation of a species distribution EBV for the United Kingdom, covering 5293 species from 1970-2015. The data product contains an annual occupancy estimate for every species in each year, each with a measure of uncertainty. I will describe the workflow to produce this data product. The data collation step bring togehter different sources of occurrence records; the data standardisation step harmonizes these records to a common spatio-temporal resolution. These data are then converted into a set of 'detection histories' for each species within each taxonomic group, before being passed to the occupancy-detection model. Outputs from this model are then summarised as 1000 samples from the postierior distribution of occupancy estimates for each species:year combination. I will also describe the infrastructure requirements to create the EBV and to update it annually. This endeavour has been made possible because the vast majority of the 34 million species records have been collated and curated by 31 taxon-oriented citizen science groups. I go on to describe the challenges of harmonizing and integrating these occurrence records with other data types, such as from systematic surveys, including count data. Such "integrated models" are statisitcally challenging, but now within reach, thanks to the development of new tools that make it possible to conceive of modelling everything, everywhere. However, a substantial and concerted effort is required to curate biodiversity

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data in a way that maximises their potential for the next generation of models, and for truly global EBVs.

Keywords

EBV, occupancy model

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